

## NOAA Science Used to Strengthen Protection of Hawaiian Reef Fishes

### Hawaii's World-famous Coral Reefs

Hawaii's world-famous coral reefs are home to more than 5,000 known marine plant and animal species. About one-quarter of those species are known to live *only* in the Hawaii reef ecosystems. Along with their vast geographic range and their diverse marine ecosystems, the state's extensive reefs provide food, jobs, and protection from storms. Reefs are a vital part of the state's tourism and recreation industries, providing diving, as well as snorkeling destinations. Research funded by NOAA through the Hawaii Coral Reef Initiative Research Program estimates the main Hawaiian Islands' nearshore reefs generate about \$800 million annually in gross revenues.

### Degradation of Hawaiian Coral Reefs

Scientific evidence points to rapid deterioration of reefs worldwide, with symptoms including loss of hard corals, more and more invasive algal blooms, and increased coral bleaching and disease. Scientists are still studying the wide range of causes of coral decline. They understand that human impacts, alone and in combination with factors such as hurricanes and high water temperatures, degrade reef systems. Increased development and land use stresses, along with sedimentation, eutrophication, overfishing, and pollution pose growing risks to Hawaii's coral reefs. NOAA science points to a need to strengthen resource management capacities to ensure the sustainability of the reefs.

### Hawaii Coral Reef Initiative Research Program

Established in 1998, the Hawaii Coral Reef Initiative Research Program (HCRI-RP) conducts research and monitoring to pro-



*Photographer: Marc Hughes (Hawaii Coral Reef Initiative Research Program)*

vide managers needed information to preserve and protect the state's coral reef ecosystems. With financial support from NOAA over the past five years, universities, non-profit organizations, and resource management agencies team-up to protect healthy reefs and, possibly slow or reverse reef degradation. This NOAA effort helps the agency meet its responsibilities under the Coral Reef and Marine Conservation Act of 2000 and also helps meet priorities of the U.S. Coral Reef Task Force. The program partners with the University of Hawaii, the state's Department of Land and Natural Resources's Division of Aquatic Resources, the Pacific Science Association, Bishop Museum, and the Hawaii Nature Conservancy.

### Effectiveness of Fisheries Replenishment Areas

In response to declines in reef fishes due to aquarium collectors, the Hawaii state legislature created the West Hawaii Regional Fishery Management Area in 1998 to improve management of fishery resources. In 1999 the West Hawaii Fisheries Council, a community-based group of individuals,